	December 2002 adoption	April 2004 proposal
Step 1: Base Emissions Inventory	The 2000 reported inventory was extracted from the Point Source Database by modeling staff.	The 2000 reported inventory was extracted from the Point Source Database by modeling staff to capture any updates since the extract used in for Dec. 2002 modeling.

Step 2: Application of speciation profiles	2.a: Identify each source whose emissions are speciated 75% or more and assume the unspeciated emissions (up to 25% for each source) have the same make-up as the speciated portion. 2.b: For each source speciated less than 75%, ignore the reported speciation and apply a Texas-specific average or EPA default profile.	2.a: Refine EPA default profiles and profile assignments. 2.b: Merge the profile assignments with each emission point 2.b: Compare each point's reported speciation with its assigned profile 2.c: Retain each point's reported speciation and drop already reported species from the assigned profiles 2.d: Normalize the remaining assigned profile at each point 2.e: "Fill in the gaps" by applying the resulting normalized profile at each point to its reported unspeciated emissions, thereby creating a unique speciation profile for each point

| Step 3: Adjusting the inventory | 3.a: Baylor aircraft instrument measurements reveal olefins to be in roughly the same concentrations as NOx in large industrial plumes.

3.b: Maximum Incremental Reactivity (MIR) analysis of VOC groups, along with emissions inventory data, identifies 12 olefin groups as highly reactive.

3.c: The inventory of these 12 VOC groups was adjusted, at the 27 of the largest emitters of these compounds according to the speciated modeling inventory, so that the tpd of these VOCs equaled the tpd of NOx from these accounts.

3.d: The extra emissions were distributed to all point sources across the 8 County NAA which, according to the speciated modeling inventory, emitted one or more of these 12 VOC groups.

3.e: The extra emissions were assumed to be mostly Ethylene and Propylene and were therefore modeled as generic olefinic VOC. | 3.a: Further analysis of Baylor Aircraft data leads to targeting of "terminal olefins" for adjustment

3.b: Select those accounts with 10 tpy (2.28 #/hr) or more of terminal olefins in the newly speciated modeling inventory, and adjust those species to equal the NOx from those accounts, on a molar basis, since the aircraft instruments measure concentrations and not mass.

3.c: Distribute the resulting extra mass across the 8 County NAA to any point with any of the terminal olefins

3.d: The extra emissions are now handled explicitly in the model, as opposed to being lumped together as generic olefinic VOC; Ethylene and Propylene are the largest species in the adjustment. |
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Step 4: Refining the inventory	4.a: Industrial Emissions Assessment staff, as well as Modeling staff, attempted to label each emission point (as a flare, cooling tower, vent, fugitive, etc...) based on the limited data reported to the Point Source Database by industry.	4.a: IEAS staff, along with an industry representative, again attempted to characterize each emission point and expanded the number of categories. 4.b: The classification scheme was distributed to industry for comment; few have been received. 4.c: This collaborative effort with industry will result in a refinement of the modeling inventory and ensure the proper identification of emission points (ie: a number of vents were originally included in the fugitive category)

Step 5: Establish the cap	5.a: Modeling staff revisited the Olefin-to-NOx adjustment to determine how much each species contributed to the total additional mass. 5.b: Conducted modeling analysis to determine how many HRVOCs to control and what level of control would be necessary to demonstrate an equivalent ozone benefit for 80% Nox reduction versus 90% Nox reductions 5.c: Identified 4 HRVOC groups for Harris county (Ethylene, Propylene, 1,3-Butadiene and Butenes) and 2 HRVOCs for the 7 adjacent counties (Ethylene and Propylene) 5.d: Sort in descending order the final adjusted and speciated HRVOC EI 5.e: Determined a *de minimus* threshold of 10 TPY (commonly used for HAPs) or 2.28 #/hr. 5.f: Removed fugitive emissions, based on preliminary emission point identification analysis for the entire 8 County NAA, to give emission totals for flares, cooling towers and vents at each account subject	5.a: The newly adjusted inventory resulted in a difference in emissions at the accounts subject to the cap. 5.b: The methodology used to establish the initial cap was applied to the new inventory. 5.c: Identified 4 HRVOC groups for Harris county (Ethylene, Propylene, 1,3-Butadiene and Butenes) and 2 HRVOCs for the 7 adjacent counties (Ethylene and Propylene) 5.d: Sort in descending order the final adjusted and speciated HRVOC EI 5.e: Determined a *de minimus* threshold of 10 TPY (commonly used for HAPS or 2.28 #/hr. 5.f: Removed fugitive emissions, based on preliminary emission point identification analysis for the entire 8 county NAA, to give emission totals for flares, cooling towers and vents at each account subject to the cap provisions

Step 5: Establish the cap (cont'd)	5.g: Applied a weighted average reduction to sources depending on the size of their remaining inventory (after removal of fugitives) to achieve the overall reduction target of 64% (>500 #/hr = 70% control, >125 #/hr & < 500 #/hr = 68% control, >10 #/hr & < 125 #/hr = 60% control, > 2.28 #/hr & <10 #/hr = 50% control)	5.g: Applied a weighted average reduction to sources depending on the size of their remaining inventory (after removal of fugitives) to achieve the overall reduction target of 64% (>500 #/hr = 70% control, >125 #/hr & <500 #/hr = 68% control, >10 #/hr & <125 #/hr = 60% control, >2.28 #/hr & <10 #/hr = 50% control)